

CLAIMS

What is claimed is:

1. A ferroelectric gate device which comprises:

a ferroelectric capacitor;

5 a switching element; and

a field-effect transistor having a source, a drain
and a gate;

said ferroelectric capacitor having an input
terminal at one end,

10 the other end of said ferroelectric capacitor being
connected to one end of said switching element,

the other end of said switching element being
connected to the gate of said field-effect transistor, and
said switching element being a zener diode.

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2. A ferroelectric gate device according to claim 1,
wherein when a voltage is applied to said input terminal,
said switching element serves as a resistor if a voltage
higher than the coercive voltage of a ferroelectric

20 substance which said ferroelectric capacitor comprises is
applied to said ferroelectric capacitor, and

when a voltage is applied to said input terminal,
said switching element serves as a capacitor if a voltage
lower than the coercive voltage of said ferroelectric

25 substance is applied to said ferroelectric capacitor.

3. A ferroelectric gate device according to claim 1,
wherein the anode of said zener diode is connected to the
gate of said field-effect transistor, and

5 the cathode of said zener diode is connected to the
other end of said ferroelectric substance.

4. A ferroelectric gate device according to claim 1,
wherein said field-effect transistor is a MOS transistor.

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5. A ferroelectric gate device according to claim 1,
wherein said ferroelectric capacitor comprises one
ferroelectric material selected from the group consisting
of strontium bismuth tantalate, bismuth titanate, lead
15 titanate and polyvinylidene fluoride-ethylene trifluoride
copolymer.

6. A ferroelectric gate device according to claim 1,
wherein said ferroelectric capacitor comprises strontium
20 bismuth tantalate as a ferroelectric material, and

the area of said ferroelectric material being about
1/10 the area of said gate.